Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

[1] (Original) A solar cell comprising:

a substrate;

a conductive film formed on the substrate;

a compound semiconductor layer formed on the conductive film, the compound semiconductor layer including a p-type semiconductor crystal containing an element of Group Ib, an element of Group IIIb, and an element of Group VIb;

a n-type window layer formed on the compound semiconductor layer, the n-type window layer having an aperture; and

a n-type transparent conductive film formed on the n-type window layer and on a portion of the compound semiconductor layer at the aperture of the n-type window layer,

wherein

the compound semiconductor layer includes a high-resistance part, the high-resistance part being located in a portion of the compound semiconductor layer in the vicinity of a surface thereof on a side opposite to the conductive film, the high-resistance part containing a n-type impurity doped in the p-type semiconductor crystal, and

the high-resistance part is located under the aperture of the n-type window layer.

[2] (Original) The solar cell according to claim 1, wherein

the high-resistance part has a resistance higher than a resistance of the n-type window layer.

[3] (Original) The solar cell according to claim 1, wherein

the compound semiconductor layer has a recessed surface on its face on the side opposite to the conductive film, and

the high-resistance part is formed in the vicinity of the recessed surface.

[4] (Original) The solar cell according to claim 1, wherein

the n-type transparent conductive film is connected with a part of the compound semiconductor layer other than the high-resistance part only via at least either one of the n-type window layer and the high-resistance part.

[5] (Original) The solar cell according to claim 1, wherein

the high-resistance part contains, as the n-type impurity, at least one element selected from the group consisting of the elements of Group IIa and the elements of Group IIb.

[6] (Original) The solar cell according to claim 1, wherein

the n-type impurity of the high-resistance part is Zn, Mg, or Ca.

[7] (Original) The solar cell according claim 1, wherein

the p-type semiconductor crystal of the compound semiconductor layer is a chalcopyrite-structured $CuInSe_2$ crystal, a chalcopyrite-structured $Cu(Ga,In)Se_2$ crystal, or a chalcopyrite-structured $CuIn(S,Se)_2$ crystal.

[8] (Original) The solar cell according to claim 1, wherein

the n-type window layer is a ZnO film or a ZnMgO film.

[9] (Original) The solar cell according to claim 1, further comprising:

a n-type buffer layer formed between the compound semiconductor layer and the n-type window layer, the n-type buffer layer having an aperture that is connected with the aperture of the n-type window layer.

[10] (Original) The solar cell according to claim 9, wherein

the n-type buffer layer is a Zn(O,OH) film or a Zn(O,S,OH) film.

[11] (Original) The solar cell according to claim 1, wherein

the n-type transparent conductive film is an ITO film, a SnO_2 film, an In_2O_3 film, a ZnO:Al film, or a ZnO:B film.

[12] (Original) The solar cell according to claim 1, wherein

the substrate is a glass substrate containing at least one alkali metal element selected from the group consisting of Na, K, and Li, and

a difference between a coefficient of linear expansion of the substrate and a coefficient of linear expansion of the p-type semiconductor crystal is within a range of not less than 1×10^{-6}/K and not more than 3×10^{-6}/K.

[13] (Original) A solar cell producing method comprising the steps of:

forming a conductive film on a substrate;

growing a p-type semiconductor crystal on the conductive film, the p-type semiconductor crystal containing an element of Group Ib, an element of Group IIIb, and an element of Group VIb;

forming a n-type window layer on the p-type semiconductor crystal, the n-type window layer having an aperture; and

forming a n-type transparent conductive film on the n-type window layer and on a portion of the p-type semiconductor crystal at the aperture of the n-type window layer,

the solar cell producing method further comprising the step of doping an n-type impurity in the p-type semiconductor crystal, in the vicinity of a surface of the p-type semiconductor crystal under the aperture of the n-type window layer, the doping step being carried out between the step of forming the n-type window layer and the step of forming the n-type transparent conductive film.

[14] (Original) The solar cell producing method according to claim 13, wherein

in the step of doping the n-type impurity in the p-type semiconductor crystal, an impurity film is formed by depositing the n-type impurity by a vapor deposition method or an evaporation method on the n-type window layer and the portion of the p-type semiconductor crystal that is exposed at the aperture of the n-type window layer, and the

n-type impurity in the impurity film is diffused by a heat treatment into the portion of the p-type semiconductor crystal.

[15] (Original) The solar cell producing method according to claim 13, wherein

in the step of doping the n-type impurity in the p-type semiconductor crystal, an impurity film is formed by depositing the n-type impurity by plating on the portion of the p-type semiconductor crystal that is exposed at the aperture of the n-type window layer, and the n-type impurity in the impurity film is diffused by a heat treatment into the portion of the p-type semiconductor crystal.

[16] (Currently amended) The solar cell producing method according to claim 14 ~~or 15~~, further comprising the step of removing the impurity film, the step of removing the impurity film being carried out between the step of doping the n-type impurity in the p-type semiconductor crystal and the step of forming the n-type transparent conductive film.

[17] (Currently amended) The solar cell producing method according to claim ~~13~~15, further comprising the step of removing the impurity film, the step of removing the impurity film being carried out between the step of doping the n-type impurity in the p-type semiconductor crystal and the step of forming the n-type transparent conductive film.

[18] (Currently amended) The solar cell producing method according to claim ~~17~~13, wherein in the step of doping the n-type impurity in the p-type semiconductor crystal, the n-type impurity is implanted by ion implantation into the portion of the p-type semiconductor crystal via the aperture of the n-type window layer.

[19] (Currently amended) The solar cell producing method according to claim ~~13~~18, wherein in the step of doping the n-type impurity in the p-type semiconductor crystal, a heat treatment is carried out additionally, after the n-type impurity is implanted.

[20] (New) The solar cell producing method according to claim 13, further comprising the step of forming a n-type buffer layer having an aperture, the step of forming the n-type buffer layer being carried out between the step of growing the p-type semiconductor crystal and the step of forming the n-type window layer.